

Abstract Submitted  
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**Initiation Mechanisms in IHE and CHE Materials** ANDREW JARDINE, DAVID WILLIAMSON, STEPHEN WALLEY, University of Cambridge, STEWART PALMER, Retired, CLAIRE LEPPARD, AWE, Aldermaston, FRACTURE & SHOCK PHYSICS GROUP, UNIVERSITY OF CAMBRIDGE TEAM, AWE TEAM — Impact sensitivity and subsequent impact initiation is one of the key characteristics of explosive materials. Various standardised tests exist, such as the Rotter or BAM impact tests, which allow the relative sensitivity of different materials to be characterised. However, these provide little insight into the underlying behaviour of the material. The use of a periscopic glass-anvil drop-weight apparatus has proven to provide valuable information about the hotspot initiation of many materials [1,2]. In this paper we describe experiments which apply the technique, in conjunction with high speed video and additional diagnostic instrumentation, to study the mechanism of initiation of modern explosive materials including TATB, LLM-105, Fox-7, HMX, RDX and PETN.

[1] J.E. Field, N. K. Bourne, S. J. P. Palmer, S. M. Walley, Hot-Spot Ignition Mechanisms for Explosives and Propellants, *Phil. Trans. R. Soc. Lond. A* 339, 269-283 (1992).

[2] J. E. Field, Hot Spot Ignition Mechanisms for Explosives, *Acc. Chem. Res.* 25, 489-496 (1992).

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